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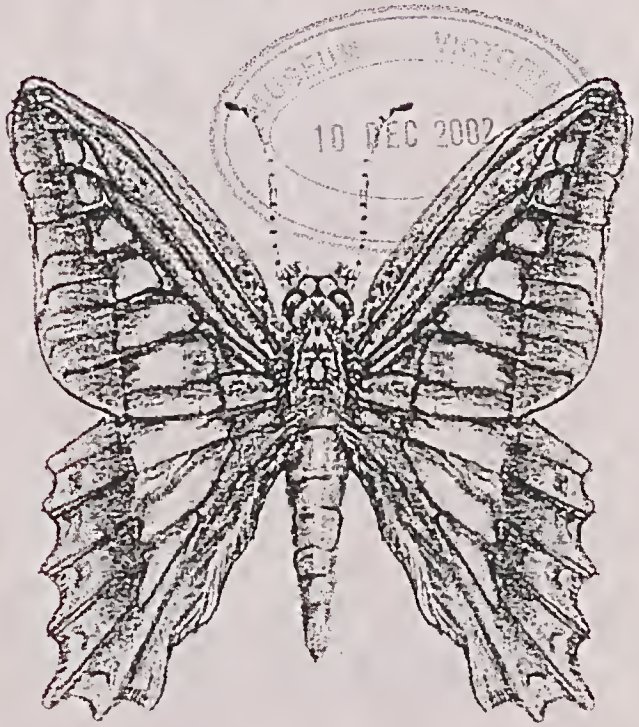

News Bulletin of The Entomological Society of Victoria Inc.

THE ENTOMOLOGICAL SOCIETY OF VICTORIA (Inc)

MEMBERSHIP

Any person with an interest in entomology shall be eligible for Ordinary membership. Members of the Society include professional, amateur and student entomologists, all of whom receive the Society's News Bulletin, the Victorian Entomologist.

OBJECTIVES

The aims of the Society are:

(a) to stimulate the scientific study and discussion of all aspects of entomology,
(b) to gather, disseminate and record knowledge of all identifiable Australian insect species,
(c) to compile a comprehensive list of all Victorian insect species,
(d) to bring together in a congenial but scientific atmosphere all persons interested in entomology.

MEETINGS

The Society's meetings are held at La Trobe University, 2nd Floor, Room 2.29, 215 Franklin Street, Melbourne (Opposite the Queen Victoria Market) Melway reference Map 2F B1 at 8 p.m. on the third Friday of even months, with the possible exception of the December meeting which may be held earlier. Lectures by guest speakers or members are a feature of many meetings at which there is ample opportunity for informal discussion between members with similar interests. Forums are also conducted by members on their own particular interest so that others may participate in discussions.

SUBSCRIPTIONS

Ordinary Member	$20.00 (overseas members $22)
Country Member	$16.00 (Over 100 km from GPO Melbourne)
Student Member	$12.00
Associate Member	$ 5.00 (No News Bulletin)

Associate Members, resident at the same address as, and being immediate relatives of an ordinary Member, do not automatically receive the Society's publications but in all other respects rank as ordinary Members.

Cover design by Alan Hyman.

Cover illustration of the Blue Triangle butterfly, *Graphium sarpedon* L. by Rhonda Millen.

MINUTES OF THE GENERAL MEETING, 18 OCTOBER 2002

Meeting opened 8.04pm.

Present: P. Carwardine, D. Dobrosak, I. Endersby, M. Endersby, E. Grey, P. Grey, J. Hannan, A. Kellehear, P. Marriot, R. McMahon, C. Peterson, J. Shield, D. Stewart, J Tinetti, Ray Willehon, A Yen, J. Yen.

Apologies: G. Weeks.

Minutes: Minutes of the August general meeting were accepted with the correction that R. McMahon was present. M: D. Stewart, S: I. Endersby.

Correspondence:

- A nomination for the Le Souëf award has been received and will be considered by the relevant Committee.
- Circular 99 of the Society of Insect Studies was tabled.
- The following people won minor bursaries in the Science Talent Quest for their posters or scientific wall charts: Jessica Alizzi from Carey Baptist Grammar School, Donvale; Eleni Tsinissidis from Oakleigh Greek Orthodox College; and, Anthony Liddy from Solway Primary School. Ian Endersby will attend the awards presentation.

Treasurer's Report:
Account Balances are:General account $ 6,437; Le Souëf account $3695.
M: I. Endersby, S: D. Stewart

Editor's Report:

- Articles are needed for the December issue please.

General Business:

1. There is a possibility of an aquatic insect excursion early in 2003.
2. A visit to the museum is under investigation.

Speaker:

Jenny Shields spoke on "Spiders of the Box Iron Bark Forest". She outlined her recently published research that was conducted in the Bendigo region. Her aim was to identify spiders of the forest so that the average person could recognise them and put a name to them. She illustrated her address with a collection of slides that showed spiders found in different sections of the forest. After questions and discussion the president thanked Jenny for her address.

Meeting closed.

Aspects of adult behavior of *Delias nigrina* (Fabricius) (Lepidoptera: Pieridae)

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Abstract
Observations on pre-oviposition host testing, feeding, group territoriality, and courtship refusal are provided for *Delias nigrina* (Fabr.) in south-eastern Queensland. In the subtropical McPherson Region adults are shown to be more frequently encountered during the cooler months.

Preamble
Unpalatable to vertebrate predators (Orr 1999), the aposematically patterned *Delias* Hubner comprises a charismatic Australasian genus within which new species are still being described (van Mastrigt 1996; Lachlan 1999, 2000; Muller 2001). An extensive overview of this pierine genus is given by Parsons (1998) who mentions its popularity with collectors. Indeed, it now has a dedicated web-site (Day 2000-02). Yet, despite this recent global fame, little appears to be known about mostindividual species' biology, habitats, and behavior. Quality illustrations of the mature larva, pupa, and adults of the common Black Jezebel, *Delias nigrina* (Fabr.) are now available. Enthusiasts will find these in Braby (2000) or by accessing Kendall (2001) on the World Wide Web.

For me, this Jezebel encapsulates significant childhood memories, and served to reinforce my growing interest in Australasian butterflies. Quoting Lew Wallace (1827-1905) from *The Prince of India*, 'Beauty is altogether in the eye of the beholder.' To this I might add, and certainly that of the young butterfly collector! Upon capture of my first pair at the age of 10, I marvelled at their vibrant undersides. Splendour to us yet alarming aposematism to birds. Beauty as Darwin (1859) argued is largely subjective. Later, in March 1975, I encountered an abundance of hill-topping *Delias* near Bulli Pass NSW of which I wrote (then aged 12) in a Primary School submission of 14/11/75. This remains my earliest surviving field note! It is included below for posterity.

> "When (we) were at Bulli, we stopped at a service station. I stepped out for a look around. Just at that moment, I saw a Common Jezabel. I chased it, but it flew over a highway. Then I saw another one, (and) I chased it into a park. I looked around and I saw hundreds of butterflies. These were some of them: Common Jezabels, Nysa Jezabels, Blue Triangles and Macleay's Swallowtails. That was the most beautiful sight, I have ever seen. They were mostly males because we were on a mountain (ridge). The females are found where the food plant grows." (Clarification added in parentheses).

Introduction
In Australia, Orr (1988) has studied courtship refusal and mating behavior in *Delias nigrina* in some detail. My observations on this species in south-eastern Queensland in 1993 supplement and closely agree with those of Orr's. It seems that adult behavior is remarkably consistent between populations through space and time. The pre-oviposition host testing, feeding, and territoriality observations documented below are extracts from contemporaneously written field notes. The territorial behavior in particular seems noteworthy because in my experience males rarely collectively patrol larval hosts, probably because their larvae usually pupate singly off the host and only rarely as a small cohort on the mistletoe itself (B.Orr pers. comm.). A temporal chart provided for the McPherson Region, which includes this sector of Queensland and also north-eastern NSW, shows that adults are more frequently encountered during the cooler months in subtropical latitudes. This agrees with early qualitative conclusions from other parts of its range (Waterhouse 1932), and reflects the generic tendency within Australia (Braby 2000).

Courtship Refusal Observations
Locality: Eagleby, Queensland (27°41s, 153°13e)
Habitat: in residential garden
Date: 29 April 1993, at 9:10am (EST) (0910h)
Weather: sunny period during largely overcast conditions, still. Temp. 22°C

A female of *D. nigrina* in fresh to good condition was observed feeding, about 8-10m up, at bright red blossoms of a large Swamp Bloodwood, *Eucalyptus ptychocarpa* F. Muell. (Myrtaceae). Whilst she fed, a fresh conditioned male, seemingly unaware of her presence established a territory by patrolling in a meandering flight back and forth, some 10 metres out from the easterly side of the tree (the sunnier side at the time). At this time his territory seemed associated with a foraging site, rather than about a solitary tree as a landform (Thornhill & Alcock 1983).

After feeding for about 30 seconds, the female again took to flight and was detected by the male. The male quickly pursued her from behind. He ceased strong flapping (involving high lateral wing angles), and instead commenced a hovering flight (involving low lateral wing angles) by rapidly fluttering his wings. He remained situated about 0.2 to 1.0 metre behind, and consistently about 0.2 metres (20cm) below her. No attempt was made to fly above her. The male continued to pursue her from the airspace behind and below, whilst she flew for several more metres. During pursuit the male did not attempt to overtake her or approach closer. When the male flies below the female during courtship he is presumably directing over her a stream of pheromone-laden air from the androconial scales on his wings (Orr 1988).

The female seemed oblivious to the pursuing male (suggestive of refusal) and fed again at another flowering cluster. She settled vertically, with her head upward and wings closed. Once feeding, the male gently fluttered closer to within 10-20cm. He now flew above and about the settled female, oscillating sideways at times. This behavior seems characteristic of the species (Orr 1988). The female responded by exposing the upper surface of her wings, maintaining them in an almost fully opened position for several seconds - a known rejection posture in this species (Orr 1988) and in *D. harpalyce* (Don.) (pers. obs.). She then took to flight once again and sought yet another flower upon which to feed.

This general behavior continued for five feeding bouts, but only once whilst courted, did she give a known rejection signal - at all other times her wings remained closed over her thorax. Although ignoring the male might also be a rejection strategy it did not deter him immediately. Once, on one of the earlier feeding bouts, the female seemingly responded to the courting male by adopting a brief fluttery flight whilst she continued to feed at the flower as the male hovered close behind. This fluttering behavior, if a refusal signal, also did not deter the male's courtships. The male persevered with courtship until the fifth time the female settled to feed. However, on this final occasion he flew straight past her, and headed to the top of the tree, where he established a new territory, patrolling the tree's crown. The new choice of the crown may have been because of its prominence (landform) in a garden (Thornhill & Alcock 1983) or a combination of this and its attraction as a foraging site (Thornhill & Alcock 1983). Female behavior during her fifth foraging bout did not differ from earlier forages, hence the male must have detected her earlier refusal signal(s) and chosen to abandoned the quest.

Territoriality Observations
Locality: Tallebudgera Creek, Burleigh Heads, Queensland (28°05s, 153° 27e)
Habitat: estuary shoreline scrub
Date: 21 August 1993, at c. 3:00pm (EST) (1500h)

Weather: sunny, Temp. 25°C

Several *D. nigrina* egg batches, and some pupae of the same species were present on *Muellerina celastroides* (Sieber ex Schult. & Schult.f.) Van Tiegh. (Loranthaceae) - a known larval host (Common & Waterhouse 1981, Dunn 1995). All pupae (not counted but less than 10) were in a cohort formation exposed to direct afternoon sunshine and some had already eclosed. Larvae may pupate either on or off the mistletoe (Braby 2000), however the latter is the norm (B.Orr pers. comm.). Moreover, although the larvae are gregarious they normally pupate singly (Braby 2000). One egg batch was subsequently taken for host trials (see Dunn 1995), and a sample pupa taken as a voucher emerged two days later and proved female.

A number of males patrolled the large mistletoe clump by making short (c.4m) circuitous flights, back and forth, on the sunlit side, presumably waiting for newly eclosed females. It was this unusually focussed male behavior some 2-3m above ground, that drew attention to the mistletoe (Dunn 1995). In my experience males of *D. nigrina* usually select territories associated with foraging sites, crowns of emergent trees, escarpments, hilltops or ridges, and forest corridors/clearings created by rivers or roads (pers. obs.). And, Braby (1987) likewise notes similar selections for *D. harpalyce* but highlights a temperature dependency. At times the *D. nigrina* males settled vertically (with closed wings) on the leaves of the larval host. When resting they did not fly out to investigate the other circuiting males, nor did the patrolling males investigate them or interact with the other patrolling males. All flew near each other, at times passively trailing (but not aggressively pursuing) to within 30cm and often maintaining equidistance, predominantly on the sunlit side of the host plants, although occasionally an adult strayed a few metres farther a field. There was no doubt that they were aware of each other's presence, but it seemed a cooperative group territory was operating. Normally territorial males are solitary or nearly so and investigate and challenge other rivals close by, driving them from their territory. No pupae were on the shaded (southerly) side of the host and similarly, adults rarely ventured behind in the shaded areas.

Pre-oviposition host-testing observations
Locality: Wellington Point, Queensland (27°29s, 153°14e).
Date: 6 July 1993, mid afternoon (unrecorded time between 1400-1600h)
Habitat: open eucalypt forest
Weather: largely overcast with occasional sunny patches. Temp. c. 22°C.

A battered female *D. nigrina* was observed flying about and around the middle and lower sections of several large (2m long) pendulous clumps of *Amyema miquelii* (Lehm. ex Miq.) Van Tiegh. (Loranthaceae) all situated some 5m above ground on *Eucalyptus* L'Herit boughs. The female repeatedly landed on the mistletoe leaves, each time aligned vertically, head facing upward, and only on the sunlit side of the host. With aid of binoculars, she was seen to stroke her forelegs over the leaf surface soon after landing, but did not oviposit whilst under observation. When the weather soon deteriorated she settled for a lengthy time to await more favourable conditions. Observations ceased as the weather worsened.

The tree was climbed, and an examination of the mistletoe about which she had earlier flown and tested with her tarsi revealed many *Delias* eggs and larvae. All larvae were those of *D. argenthona* (Fabr.), and included numerous first instars, a number of second and third instars, and a few fourth instar larvae. There were no pupae or older pupal shells of either species. All eggs collected proved to belong to *D. argenthona* (and some were later used for host trials reported in Dunn 1995). It seems the female *D. nigrina* was merely inspecting plants and had not laid. B. Orr (pers. comm) has observed similar inspection without oviposition and he suspects females can probably recognise and avoid eggs of other species owing to the different pattern in which they are clumped.

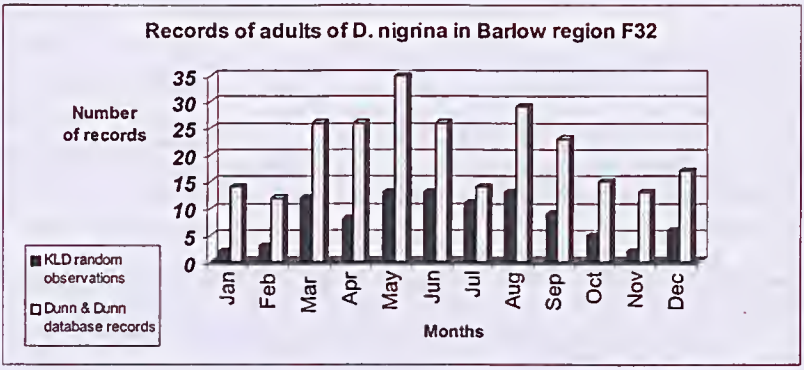
As *A. miquelii* is a regularly utilised host plant of *D. nigrina* in SE Queensland (Nousala 1979 cited by Braby 2000; Fox 1995; Dunn 1995), perhaps the occupation by *D. argenthona* may have deterred selection on this occasion because of potential larval competition. Some mistletoe species in SE Queensland, including this one, are utilised by two or more sympatric species of *Delias*, and I have observed that *D. nigrina* and *D. argenthona* will use the same clump over the course of seasons. However, I have not found juveniles of these two species sharing a single mistletoe clump simultaneously. Braby and Douglas (1992) have reported an instance of *D. harpalyce* larvae in sympatry with *D. aganippe* (Don.) so perhaps it may happen, but doubtfully when other plants are available (B.Orr pers. comm.). In this way direct competition may regularly be avoided.

Adult flight period in the subtropics

The McPherson Region (Barlow F32) as figured in Dunn & Dunn (1991, p.59), comprises south-eastern Queensland and north-eastern NSW. Within this region adults of *D. nigrina* are known to occur throughout the year (Dunn 1995) but are more frequently encountered between March and September (Figure 1), based on 249 compiled records for which a month was provided (Dunn & Dunn database). A database 'specimen record' has been defined earlier (Dunn & Dunn 1991, p.1), and an 'observation record' is comparable. One 'observation record' thus comprises *one or more* observations of a single species at a defined site on a defined day. Hence on any one day at any one site only *one* record per species can be recorded irrespective of the number of each actually active at the site. On this basis it is clearly an underestimate of peak monthly abundance as could be measured by transect walks (Haywood & Wilson 2002). The chart presented excludes bred records as these often distort temporal data (Dunn & Dunn 1991).

The 97 personal observations (KLD) arranged by month (see figure 1) comprise comparative baselines for the collection data. They were reasonably randomised as the author lived in SE Queensland between August 1992 to July 1995 and noted all active species during regular field surveys throughout the McPherson region. The baseline data coincide well with the full regional data set in the Dunn & Dunn database suggesting the latter also correlates to a fairly random collection for this particular species and hence reflects its usual seasonal appearance. This is not unexpected since *D. nigrina* is fairly common and not especially sought after by Australian collectors thereby reducing potential selection bias. Nevertheless, the seemingly anomalous database totals for May and July suggest some distortion. In May adults are perhaps in a choicer condition and so favoured for preservation given that the species' underside is especially beautiful in mint condition! The coolest month, July however is undoubtedly an unpopular time for collectors to visit this region, and who instead probably focus their collector effort in the far north where many more species are active during winter.

Figure 1 - Adult Temporal Data



Acknowledgements

I thank Dr Bert Orr for his comments on my observations. Also, Dr Brian Barlow (CSIRO, Canberra) for his identification of the mistletoes, and Mr Robert Coutts (Griffith University Qld) for his identification of the *Eucalyptus* sp. Final thanks to Prof. Roger Kitching (Griffith University, Qld) for his loan of two references.

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THE ENTOMOLOGICAL SOCIETY OF VICTORIA (INC.)
FINANCIAL MEMBERS AND THEIR INTERESTS (2002)

Dr Neil W. Archbold, P.O. Box 199, DONCASTER EAST VIC 3109. *Lepidoptera, Blattodea, Fossil History of Insecta.*

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Mr Paul Meehan, 19 Kardella Lane, MT ELIZA VIC 3930. *Lepidoptera, General entomology*

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Dr Geoff Monteith, Queensland Museum, P O Box 3300 SOUTH BRISBANE QLD 4101. *Taxonomy & biogeography of Coleoptera and Hemiptera.*

Mr M.D. Moore, 5 Oakleigh Road, MARION SA 5043.

Mr Tony Morton, The Tin Shed, VAUGHAN VIC 3451. *Palaearctic and Indo-Australian Rhopalocera.*

Mr Max Moulds, 16 Park Avenue, WAITARA NSW 2077. *Taxonomy & biology of Lepidoptera (Sphingidae), Cicadidae.*

Dr T.R. New, Department of Zoology, La Trobe University, BUNDOORA VIC 3083. *Neuroptera, Psocoptera, ecology, conservation, systematics.*

Mr Greg Newland, 62 Ewing Street, MURWILLUMBAH NSW 2484. *Butterflies.*

Mr Peter Ockenden 9 Belle Avenue WANGARATTA, 3677, *Lepidoptera, Dung Beetles.*

Mr Timothy Ockenden 9 Belle Avenue WANGARATTA, 3677, *Mantodea, Cicadas, Coleoptera, Hymenoptera.*

Mr Steven Ouwerkerk, P.O. Box 183 WANGARATTA VIC 3676. *Biological Control for Weed & Pest Management, Freshwater Invertebrates*

Dr A.B. Owen, 27 Frater St, EAST KEW VIC 3102. *Butterflies.*

Mr Mike Pucetti, P.O. Box 1547, INNISFAIL QLD 4860. *Butterflies.*

Mr Deniss M. Reeves, 30 Bramston Terrace, HERSTON QLD 4006. *Odonata; Rearing, Photography, Australian Dragonfly Society.*

Mr Henry Rich, 3/10 Blessington Street, ST KILDA...VIC...3182. *Butterflies.*

Mr Graeme Riddell, 31 Jordan Grove, GLEN WAVERLEY VIC 3150. *Butterflies, Moths, Spiders, Ants, Bees & Wasps.*

Dr Peter Samson, BSES,PMB 7, MACKAY MAIL CENTRE QLD 4741. *Sugarcane entomology, life histories of butterflies (Lycaenidae).*

Ms Jennifer Shield, 70 Graham Road, KANGAROO GROUND VIC 3097. *Spiders.*

Mr Stephen Smith, 3 Avocet Court, WERRIBEE VIC 3030. *Coleoptera, Cicadidae, Hepialidae.*

Dr C.N. Smithers, Entomology Department, Australian Museum, College Street SYDNEY NSW 2010. *Psocoptera, Mecoptera, Neuroptera, insect migration, general entomology.*

Mr David Stewart, P O Box 2152, ROSEBUD PLAZA VIC 3939. *General entomology.*

Mr John Stoner, 157 Seventh Avenue, ROSEBUD VIC 3939. *Pest insects, Biocontrol.*

Mr Allen Sundholm. *Lucanidae, Cerambycidae, Cetoniinae, Buprestidae, Butterflies, Saturnidae.*

Mr C. Timewell, 1/59 North Avenue, BENTLEIGH...VIC...3204, *Natural History (general)*

Ms Jan Tinetti & Chris Peterson, 138 Noone Street, CLIFTON HILL VIC 3068. *Ecology, Butterflies.*

Mr Ray Vagi, 12/399 Murray Road, PRESTON VIC 3072. *Butterflies, beetles.*

Mr Peter Valentine, TESAG, James Cook University, TOWNSVILLE QLD 4811. *Butterfly biogeography, conservation & ecology, tropical ecology.*

Mr C. van Dijk, P.O. Box 91, AUBURN SA 5451. *Coleoptera, Hemiptera, Botany.*

Mr Beresford Vardy, P O Box 1055, BENDIGO VIC 3552. *Butterflies.*

Mr John Wainer, 8/17 Fisher Street, EAST MALVERN VIC 3221. *Ecology & Taxonomy of ants, beetles and butterflies.*

Dr Ken Walker, Museum Victoria, GPO Box 666E, MELBOURNE VIC 3001. *Systematics of Australian native bees.*

Ms Bronwyn Walkley, 45 Sherwood Road, EAGLEMONT VIC 3079. *Collecting butterflies and moths.*

Mr Gary Webb, 32 Cook Street, CARINGBAH NSW 2229. *Cerambycidae, Forest Entomology, Effects of forest practices.*

Mr Geoffrey Weeks, 394 Belmore Road, MONT ALBERT NORTH VIC 3129. *Lepidoptera, particularly Australian.*

Mr Rob Weppler, 27 Gardenia Street, HORSHAM VIC 3400, *Coleoptera*, Cerambycidae, General collecting

Mr Matthew Williams, Department of Conservation & Land Management, Locked Bag 104 BENTLEY D.C. WA 6983. *Conservation, butterflies, cicadas.*

Dr Peter Williams, 72 Summerhill Road, GLEN IRIS VIC 3146. *Stored products & pasture entomology, Coleoptera, Lepidoptera, Odonata (Petaluridae).*

Mr Graham Wood, P.O. Box 122, ATHERTON QLD 4883. *Australian Lepidoptera, Australian Coleoptera (Lucanidae, Buprestidae, Cetoniinae).*

Mr Graham Wurtz, 1 Troon Court, THURGOONA NSW 2640. *Butteflies.*

Ms Kirin Yee, 14 COBURG VIC 3054, *Social Organisation (ants), Forensic Entomology*

Dr Alan Yen, 52-54 Brushy Park Road, WONGA PARK VIC 3115. *Insect ecology, conservation, psyllids.*

Members, please notify any alterations or errors to the above list to the Society's Editor.

Australian Journal of Entomology Volume 41, Part 3, 2002

The Australian Entomological Society publishes the *Australian Journal of Entomology* quarterly. The Entomological Society of Victoria is an affiliated society and will, in future, publish the contents of the Journal for the wider interest of its members.

SYSTEMATICS

Miguel A Alonso-Zarazaga & Manuel Sánchez-Ruiz: Revision of the *Trichosirocallus horridus* (Panzer) species complex, with description of two new species infesting thistles (Coleoptera: Curculionidae, Ceutorhynchinae)

Laurence A Mound: *Zemiathrips*: a new genus of fungus-feeding phlaeothripine Thysanoptera in Australian leaf-litter.

Laurence A Mound: *Octothrips lygodii* sp. n. (Thysanoptera: Thripidae) damaging weedy *Lygodium* ferns in south-eastern Asia, with notes on other Thripidae reported from ferns.

Alice Wells: Three new species of *Orphninotrichia* Mosely (Trichoptera: Hydroptilidae) from Barrington Tops, New South Wales, a distribution extended, and remarks on generic placement.

Stefan Schmidt & Lars Vilhelmsen: Revision of the Australasian genus *Orussobaius* Benson (Hymenoptera: Symphyta: Orussidae)

BIOGEOGRAPHY

Rieks Dekker van Klinken, Gimme H Walter & Michael K Ross: Drosophilidae (Diptera) ofAustralia's Northern Territory: ecology and biogeography.

ECOLOGY

A Meats & MS Castillo Pando: Ratio-dependent parasitism with *Trissolcus basalis* (Wollaston) (Hymenoptera: Scelionidae) on egg rafts of *Nezara viridula* (Linnaeus) (Hemiptera: Pentatomidae): effect of experimental variables and compatibility of 'ratio' and 'Holling' models.

David P Logan & Catherine G Kettle: Effect of food and larval density on survival and growth of early instar greyback canegrub, *Dermolepida albohirtum* (Waterhouse) (Coleoptera: Scarabaeidae)

PEST MANAGEMENT

Peter R Samson: Field response of sugarcane cultivars to sugarcane soldier fly, *Inopus rubriceps* (Macquart) (Diptera: Stratiomyidae).

BIOLOGICAL CONTROL

Helen F Nahrung & Brendan D Murphy: Differences in egg parasitism of *Chrysophtharta agricola* (Chapuis) (Coleoptera: Chrysomelidae) by *Enoggera nassaui* Girault (Hymenoptera: Pteromalidae) in relation to host and parasitoid origin.

Paul R Grundy & Derek A Maelzer: Factors affecting the establishment and dispersal of nymphs of *Pristhesancus plagipennis* Walker (Hemiptera: Reduviidae) when released onto soybean, cotton and sunflower crops.

THESIS SUMMARIES

Qazi MA Razzaque: Studies on the biology and ecology of the Duboisia flea beetle *Psylliodes parallis* Weise (Chrysomelidae, Coleoptera) in Duboisia plantations.

Xin-Geng Wang: Patch exploitation by the parasitoids of *Plutella xylostella*: from individual behaviour to population dynamics.

JOURNAL OF THE ENTOMOLOGICAL RESEARCH SOCIETY

The Gazi Entomological Research Society publishes the Journal of the Entomological Research Society. The Entomological Society of Victoria receives this journal on exchange and will, in future, publish the contents of the Journal for the wider interest of its members.

VOLUME 4 PART 3, 2002

Hawkeswood, T.J., Observations on Pollination of Various Heathland Plants by *Metriorrhynchus rhipidius* (Macleay) (Coleoptera: Lycidae) in Eastern New South Wales, Australia with a Review of Some Feeding Records for *Metriorrhynchus*.

Özgür, A.F., Özbek, H. The Subfamily Agathidinae (Hymenoptera, Braconidae) of Erzurum Province.

Hawkeswood, T.J., Observations on the Adults of *Micraspis frenata* (Erichson, 1842) (Coleoptera: Coccinellidae) Feeding on the Pollen of Native and Non-native Grasses (Poaceae) in Eastern New South Wales, Australia.

Hawkeswood, T.J., A review of the Biology and Host Plants of Australian Buprestidae (Coleoptera) Known to Breed in *Eucalyptus* Species (Myrtaceae).

Seasons Greetings to all members and readers from the Council of the Entomological Society of Victoria Inc

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CONTRIBUTIONS TO THE *VICTORIAN ENTOMOLOGIST*

The Society welcomes contributions of articles, papers or notes pertaining to any aspect of entomology for publication in this Bulletin. Contributions are not restricted to members but are invited from all who have an interest. Material submitted should be responsible and original. The Editor reserves the right to have articles refereed. Statements and opinions expressed are the responsibility of the respective authors and do not necessarily reflect the policies of the Society.

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Contributions may be typed on A4 paper or *preferably* sent to the Hon. editor on an **IBM formatted disk in *Microsoft Word for Windows, WordPerfect*** or any recognised word processor software with an enclosed hard copy. Contributions may also be E-mailed to Internet address: **ddobrosak@mira.net.**

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DIARY OF COMING EVENTS

Friday 13 December General Meeting - Members Night

Members and visitors will give short talks and slide presentations including:

- Kelvyn Dunn: a video of butterflies filmed in several National Parks in Borneo.
- Daniel Dobrosak: a powerpoint presentation of the insects collected at the Society's Glenluce excursion.

Please bring a plate. Tea and Coffee will be provided

Friday 21 February 2003 Visit to Museum Victoria (to be confirmed)

Scientific names contained in this document are *not* intended for permanent scientific record, and are not published for the purposes of nomenclature within the meaning of the *International Code of Zoological Nomenclature*, Article 8(b). Contributions may be refereed, and authors alone are responsible for the views expressed.

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